CONFEDERATED TRIBES OF THE GOSHUTE RESERVATION UNIFIED WATERSHED ASSESSMENT

CONFEDERATED TRIBES OF THE
GOSHUTE RESERVATION
Ibapah, Utah

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1.0 INTRODUCTION

In February 1998, the U.S. Environmental Protection Agency and the U.S. Department of Agriculture completed a *Clean Water Action Plan* for the nation. This plan called for assessing, restoring, and protecting surface fresh water, groundwater, wetlands, and associated natural resources.

An important part of the *Clean Water Action Plan* is the development of Unified Watershed Assessments ("UWAs") by states and tribal entities throughout the nation. The purpose of the UWA is to identify watersheds with critical water-quality concerns and help focus resources on solving those concerns.

The UWA presented herein has been developed for the Confederated Tribes of the Goshute Reservation ("the Reservation") located in west-central Utah and east-central Nevada (Figure 1). UWAs have been completed on a state level for both Utah and Nevada (Utah Division of Water Quality and Natural Resource Conservation Service, 1998 and Nevada Division of Environmental Protection and Natural Resource Conservation Service, 1998, respectively). The UWA presented herein borrows from those two documents, as well as other data as cited herein.

Under the *Clean Water Action Plan*, watersheds are to be classified into one of the following four categories:

Category 1 - Watersheds in need of restoration. These watersheds do not meet, or face imminent threat of not meeting, clean water and other natural resource goals.

Category 2 - Watersheds meeting goals, including those needing action to sustain water quality. These watersheds currently meet clean water and other natural resource goals and standards and support healthy aquatic ecosystems.

Category 3 - Watersheds with pristine or sensitive aquatic systems conditions on lands administered by Federal, State, or Tribal governments. These watersheds have exceptionally pristine water quality or other sensitive aquatic system conditions and are located on lands administered by Federal, State, or Tribal governments.

Category 4 - Watersheds with insufficient data to make an assessment. These watersheds lack data, critical data elements, or the data density to make a reasonable assessment at this time.

The UWAs completed on a state-wide basis for Utah and Nevada evaluated conditions on watersheds at the scale of the 8-digit Hydrologic Unit Code ("HUC") of the U.S. Geological Survey. The UWA for the Reservation, however, was performed at a smaller scale for the following reasons:

- The Reservation occupies only a small portion of its respective HUC watershed (Southern Great Salt Lake Desert - HUC No. 16020306) and
- The Utah and Nevada UWAs did not agree on the classification of that portion of this watershed which occurs in their respective states (Utah classified this larger watershed as Category 4 while Nevada classified it as Category 2).

As a result, watershed conditions were evaluated for Deep Creek Valley, in which most of the Reservation occurs (Figure 2).

2.0 PROCESS AND COORDINATION

Preparation of the UWA for the Reservation included a meeting with various Utah, Federal, and Tribal stakeholders, discussions with land-management representatives, and reviewing existing data and reports. Data and reports were obtained from the Natural Resources Conservation Service, the U.S. Environmental Protection Agency, the U.S. Geological Survey, the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, the U.S. Bureau of Indian Affairs, the Utah Division of Water Quality, and the Tooele County Department of Health. This UWA was prepared by EarthFax Engineering, Inc. under subcontract with Somers-Jaramillo & Co., for the Confederated Tribes of the Goshute Reservation.

3.0 FINDINGS

The Deep Creek Valley is bounded on the east and south by the Deep Creek Mountains, on the west by the Goshute Mountains, and on the north by low hills and upland flats. Most of the Reservation lands are used as rangeland for cattle and horses and as wildlife habitat for deer, elk, and antelope. Major streams which flow into and drain the valley are Spring Creek and Deep Creek, both of which are perennial through at least a portion of the valley. These streams and their perennial tributaries are fed primarily by snowmelt runoff and spring discharge within the Deep Creek Mountains. The water in the valley is used locally for stockwatering as well as irrigation of meadow pastures.

Only limited watershed data exist for Deep Creek Valley. A hydrologic reconnaissance completed in the late 1960s (Hood and Waddell, 1969) provided a cursory description of the

water resources of the area, but that description is now 30 years old. According to the U.S. Geological Survey (1999), no real-time streamflow stations currently exist in the valley. Historic flow data flow data from the valley consist of continuous streamflow data collected for Deep Creek near Goshute, Utah (Station 10172893) from April 1964 through September 1968 and of annual peak-flow data for Deep Creek near Ibapah, Utah (Station 10172895) from 1959 through 1968. Limited flow and water-quality data have also been collected from perennial streams and springs in the valley for specific investigations.

Hood and Waddell (1969) estimate that an average of 28,000 acre-feet of water flows annually into Deep Creek Valley. Of this, 17,000 acre-feet is estimated to infiltrate to the groundwater system, primarily in the streams and along the irrigation ditches used to supply water to irrigated lands. The estimated average annual outflow from the valley is 2,000 acre-feet, with the majority of the basic water supply (precipitation) being lost to evapotranspiration.

Both surface and groundwater sources in the valley is of suitable quality for use as a domestic, stock, and irrigation water supply. The limited number of samples collected from streams in the valley typically had total dissolved solids concentrations of less than 400 mg/l, while groundwater samples contained total dissolved solids concentrations of less than 600 mg/l (Hood and Waddell, 1969). This water tended to be of the calcium and/or magnesium bicarbonate type. The Sodium-Adsorption Ratio and the boron concentration of the water were suitable for irrigation use (Cooper Consultants, 1989).

According to the U.S. Environmental Protection Agency (1998), insufficient data exist for HUC watershed 16020306 (of which Deep Creek Valley is a part) to assess the overall condition of the watershed under the Index of Watershed Indicators. Specifically, insufficient data are available to score the watershed for the following Condition Indicators:

- Designated use attainment
- Fish and wildlife consumption advisories
- Source water condition
- Contaminated sediment

and the following Vulnerability Indicators:

- Toxic loads over permitted limits
- Estuarine pollution susceptibility index

The U.S. Environmental Protection Agency (1998) indicates that existing ambient water quality of the HUC watershed is adequate while wetland loss is currently a moderate concern. They further indicate that aquatic species in the larger watershed are moderately vulnerable to activities which might put pressure on the watershed, while the following are only minimally vulnerable to such activities:

- Conventional loads over permitted limits
- Urban runoff potential
- Index of agricultural runoff potential
- Population change
- Hydrologic modification

No threatened or endangered species of wildlife are known to inhabit the Reservation. According to Mullen (1999) and Perkins (1999), the American peregrine falcon (an endangered species), the Bald eagle (a threatened species), and the Bonneville cutthroat trout (a conservation species in Utah and petitioned for threatened status in Nevada) are presumed to exist at least seasonally in the Deep Creek Mountains.

No threatened or endangered species of plants are known to exist on the Reservation. According to Mullen (1999) and Armstrong (1999), two sensitive species can be found elsewhere in the Deep Creek Mountains. These species are *Draba kasii* and *Hackella ibapensis*.

4.0 WATERSHED CATEGORIZATION

As indicated above, only limited watershed data exist for the Reservation and Deep Creek Valley. Most of the hydrologic data were collected over 30 years ago. The presence of threatened or endangered species on the Reservation is unknown, but selected species of concern are presumed or known to be present near the Reservation.

Given the limited data base, Deep Creek Valley is classified herein as a *Category 4* watershed. This classification agrees with that developed for the larger HUC watershed in the Utah UWA.

5.0 PROTECTION AND RESTORATION STRATEGIES

The Confederated Tribes of the Goshute Reservation is currently preparing a Water Quality Sampling and Analysis Plan under which data will be collected to allow the tribe to develop water-quality standards, establish trends, and monitor progress. Based on the data collected under this plan, sensitive areas and conditions will be identified. These data will also serve as the baseline by which the success of future protection and restoration projects are assessed.

6.0 REFERENCES CITED

Armstrong, L. 1999. Botanist, U.S. Bureau of Land Management, Richfield, Utah District. Personal communication.

Cooper Consultants, Inc. 1989. Irrigation Rehabilitation and Betterment for the Goshute Indian Reservation, Nevada. Project report prepared for the U.S. Bureau of Indian Affairs, Phoenix Area Office. Portland, Oregon.

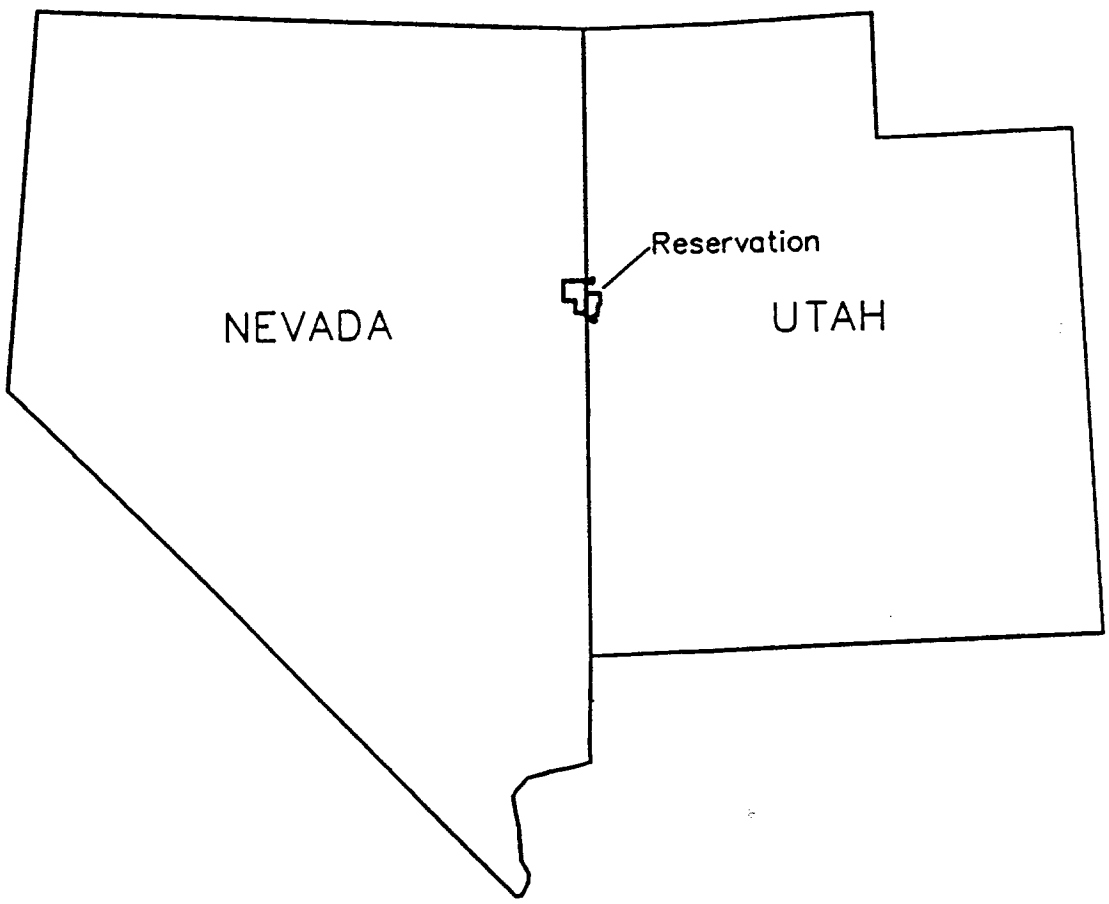
Hood, J.W. and K.M. Waddell. 1969. Hydrologic Reconnaissance of Deep Creek Valley, Tooele and Juab Counties, Utah and Elko and White Pine Counties, Nevada. Technical Publication No. 24. Utah Department of Natural Resources. Salt Lake City, Utah.

Mullen, C. 1999. Wildlife Biologist, U.S. Fish and Wildlife Service, Reno, Nevada. Personal communication.

Perkins, M. 1999. Wildlife Biologist, U.S. Bureau of Land Management, Ely, Nevada District. Personal communication.

U.S. Environmental Protection Agency. 1998. Surf Your Watershed. Internet web site www.epa.gov/surf2/hucs/16020306.

U.S. Geological Survey. 1999. Water Resource Data. Internet web site waterdata.usgs.gov/nwis-w/UT.



0' 100 mi.

FIGURE 1. RESERVATION LOCATION

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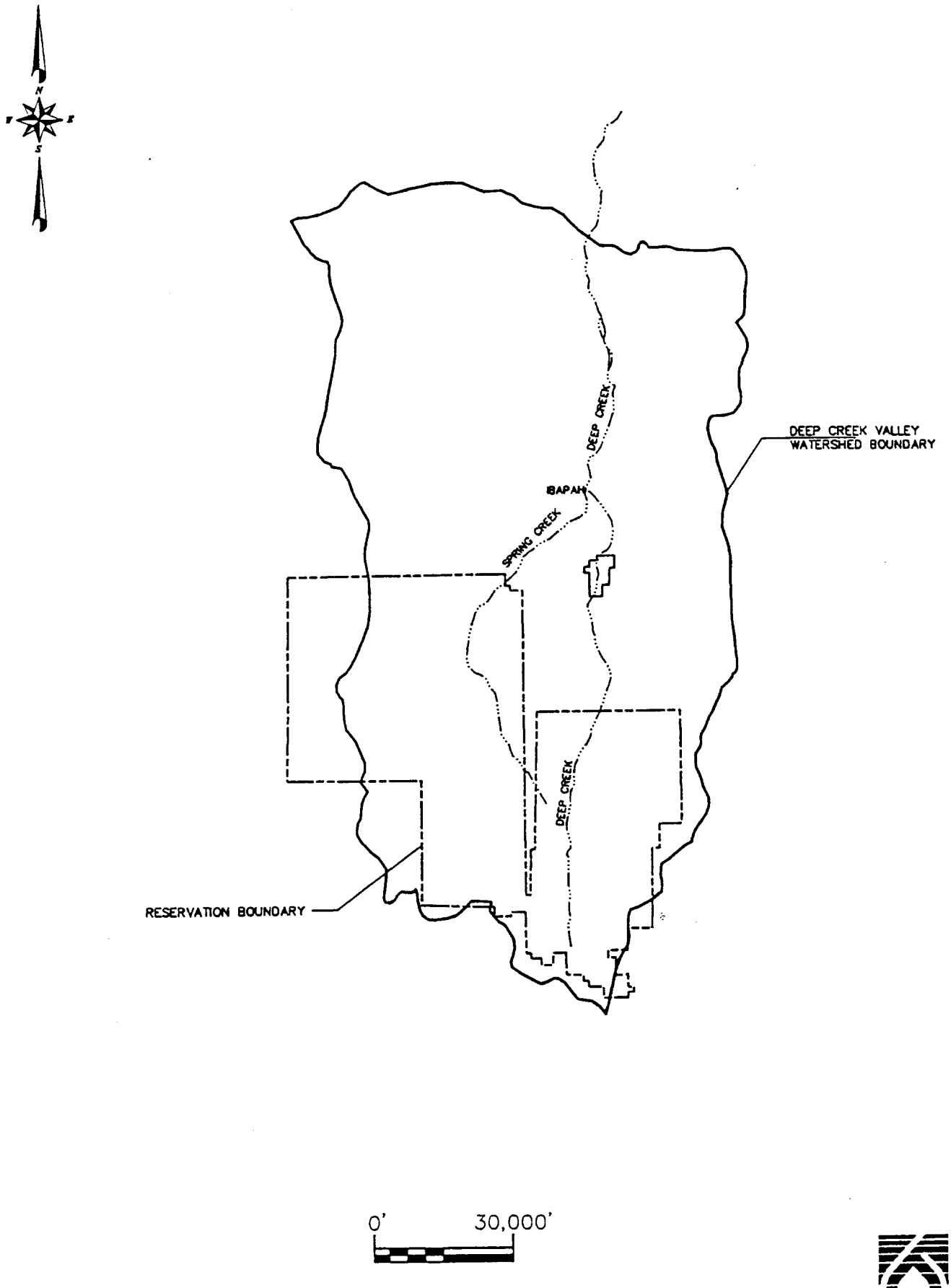

FIGURE 2. WATERSHED AREA

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